

REMARKS

As amended, the Applicant submits that all rejections have been overcome and the present application is now in condition for allowance. The foregoing amendments and the following remarks are responsive to the Office Action mailed May 2, 2002. Applicant respectfully requests entry of the submitted amendment and reconsideration of the present application as amended. As amended, claims 1-22 are present in the application. Claims 1 and 2 have been amended. No new matter has been added. The claims have been amended to clarify the invention, and are not regarded as necessary to distinguish the invention over the cited art. However, arguments responsive to the Office Action regarding the propriety of the rejections are presented with respect to the claims as presently amended, without regard to propriety of the rejection(s) of the un-amended claims.

Claim Objections

Claim 1 was objected to as containing an informality. As amended, claim 1 is believed to render this objection moot.

Rejection over *Jewell et al.* in view of *Jiang et al.* under 35 U.S.C. § 103(a)

Claims 1-13, 15, 16, 18 and 19 are rejected under 35 U.S.C. § 103(a) as obvious over *Jewell et al.* (US Patent 5,526,182), hereinafter *Jewell* in view of *Jiang et al.* (U.S. Patent 5,831,960), hereinafter *Jiang*. Applicant respectfully traverses the rejection for the reasons that follow. Applicant respectfully submits that claims 1 and 11 are neither taught, disclosed, nor rendered obvious by

Jewell, *Jiang*, or the combination thereof as they do not teach the invention claimed in claims 1 and 11.

The Office Action indicates that *Jewell* provides an array of Vertical Cavity Surface Emitting Lasers (VCSEL) suitable for both reading and writing on an optical medium. See *Office Action* at page 2. This statement indicates that there is no need for the claimed first or writing array of VCSEL and second or reading array of VCSEL of the presently claimed invention. Since *Jewell* provides a solution to the problem of reading and writing using a fundamentally different approach (a single array of VCSEL for both purposes), it teaches away from the presently claimed invention.

Moreover, the Office Action does not provide a motivation to combine the two references, merely stating that the modification of *Jewell* based on *Jiang* would have been obvious. It is far from obvious why the two need to be combined, when the Office Action acknowledges that the teaching of *Jiang* is not necessary due to the teaching of *Jewell*, and such a combination is certainly not suggested or motivated by either reference based on the Office Action.

Additionally, combination of the two references is not suitable due to the differences in application of the two references. *Jewell* is directed toward either reading or writing a group of tracks on a medium at one time. See *Jewell*, Abstract. *Jiang* is directed towards operation in CDs and DVDs which use reading and writing of a single track at a given time. See *Jiang*, Abstract. *Jiang* does not include any suggestion of using multiple VCSELs for reading or multiple VCSELs for writing, because *Jiang* focuses on reading and writing a single track.

Likewise, *Jewell* does not include any suggestion of using a writing VCSEL array and a reading VCSEL array because *Jewell* uses one array for both tasks. Thus, it is not apparent how the combination of *Jewell* and *Jiang* would operate, whether undue experimentation would be necessary to combine them, or even what the combination would look like. The actual combination of *Jewell* and *Jiang* would include an array of VCSELs suitable for both reading and writing (from *Jewell*) and a pair of VCSELs, one suitable for writing and the other suitable for reading (from *Jiang*). Even in combination, there is no teaching of a first or writing array and a second or reading array of VCSELs.

The only apparent reason to combine the two references is for a hindsight reconstruction of the presently claimed invention, which is impermissible. It is only apparent from the specification of the present application that the presently claimed invention is a workable and desirable invention, *Jewell* and *Jiang* do not, either alone or in combination, teach the presently claimed invention. For at least these reasons, *Jewell* and *Jiang* do not render obvious claim 1 or claim 11.

Rejections of claims 2-10 and 12-22

Claims 2-10 and 12-22 have also been rejected in the Office Action. These claims may be divided into two categories, claims dependent on claims 1 and 11, and an independent claim (claim 22). As Applicant understands the Office Action, the rejections of each of these claims depends on the rejection of claims 1 and 11 as described above. For the rejection of each of claims 2-10 and 12-22, the combination of *Jewell* and *Jiang* and rejection of all of the claim elements of claims 1 and 11 must be

suitable. However, the rejection of claims 1 and 11 has been shown to be incorrect, and thus cannot support the rejections of claims 2-10 and 12-22. As a result, the rejections of claims 2-10 and 12-22 are rendered moot. No representation is made as to the propriety of the rejections of claims 2-10 and 12-22, as no discussion of these rejections is appropriate at this time.

For at least these reasons, *Jewell* in view of *Jiang* cannot render obvious Applicant's invention, and Applicant respectfully requests the withdrawal of the rejections of the claims under 35 U.S.C. § 103(a) over the combination.

Condition for Allowance and Invitation for Telephonic Interview

Applicant submits that all rejections have been overcome and the present application is now in condition for allowance. If the Examiner has any questions or comments, or otherwise believes a telephonic interview may be useful, the Applicant respectfully requests that the Examiner contact the undersigned by telephone.

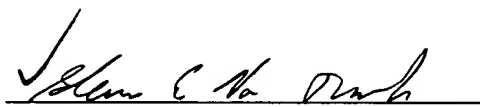
Deposit Account Authorization and Extension of Time Request

Please charge any shortages and credit any overages to Deposit Account No. 02-2666, including any funds necessitated due to insufficient funds for an accompanying check. Any necessary extension of time for response not already requested is hereby requested. Please charge any corresponding fee to Deposit Account No. 02-2666.

Respectfully submitted,

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MARKED-UP VERSION OF AMENDMENTS

Added words are underlined, deleted words are bracketed. Indications of amendments are made relative to the original application, with the assumption that the amendments of August 17, 2001 and February 14, 2002 were entered.

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IN THE CLAIMS

1. (Three times Amended) An optical recording system comprising:
 - a writing array of modulatable light sources;
 - a reading array of modulatable light sources, each modulatable light source formed as a Vertical Cavity Surface Emitting Laser (VCSEL); and
 - an objective lens positioned relative to said writing array and said reading array of modulatable light sources such that said objective lens is capable of focusing at least one light beam from each of said writing array and said reading array of modulatable light sources on a target medium;
 - and
 - a detector to receive a set of one or more beams, the set of one or more beams having emanated from the reading array of VCSEL and the set of one or more beams having reflected from the target medium.

2. (Three times Amended) The optical recording system of claim 1 wherein said writing array of modulatable light sources comprises a first array of [Vertical Cavity Surface Emitting Lasers (VCSEL)] VCSELs and said reading array of modulatable light sources comprises a second array of VCSELs.
3. (Amended) The optical recording system of claim 2 wherein said first and said second VCSEL arrays are embedded in a substrate.
4. (Twice Amended) The optical recording system of claim 3 wherein each VCSEL of said first VCSEL array is capable of writing a separate track on said target medium.
5. (Unchanged) The optical recording system of claim 1 wherein said modulatable light sources are spaced at regular intervals.
6. (Unchanged) The optical recording system of claim 5 wherein said regular intervals comprise center-to-center distances of at least approximately 40 microns.
7. (Amended) The optical recording system of claim 1 wherein said writing array of modulatable light sources comprises at least one line of modulatable light sources positioned at an angle relative to a direction of movement of said target medium.

8. (Unchanged) The optical recording system of claim 7 wherein each modulatable light source of said at least one line of modulatable light sources is associated with a separate path on said target medium.

9. (Twice Amended) The optical recording system of claim 1 further comprising:
a polarizing beam-splitter located between said writing and said reading array of modulatable light sources and said objective lens; and
a circularly polarizing element located adjacent said polarizing beam-splitter.

10. (Unchanged) The optical recording system of claim 9 wherein said circularly polarizing element comprises a quarter wave plate.

11. (Twice Amended) An optical recording system comprising:
a first array of Vertical Cavity Surface Emitting Lasers (VCSEL);
a second array of VCSEL; and
an objective lens located in an optical path of each of said first and second VCSEL arrays, wherein said objective lens is capable of focusing at least one light beam from each of said first and second VCSEL arrays on a target medium;
and
a detector to receive a set of one or more beams, the set of one or more beams having emanated from the second array of VCSEL and the set of one or more beams having reflected from the target medium.

12. (Unchanged) The optical recording system of claim 11 wherein said first VCSEL array comprises a writing array and said second VCSEL array comprises a reading array.

13. (Unchanged) The optical recording system of claim 12 wherein said first VCSEL array comprises a plurality of individually modulatable light sources and said second VCSEL array comprises a plurality of continuously operable light sources.

14. (Unchanged) The optical recording system of claim 12 wherein:

said first VCSEL array is capable of emitting a plurality of light beams having a first wavelength;

said second VCSEL array is capable of emitting a plurality of light beams having a second wavelength different from said first wavelength; and

said objective lens is achromatic.

15. (Unchanged) The optical recording system of claim 12 wherein each VCSEL of said first VCSEL array is capable of writing a separate track on said target medium.

16. (Unchanged) The optical recording system of claim 15 wherein said first VCSEL array is positioned at an angle relative to a direction of movement of said target medium.

17. (Unchanged) The optical recording system of claim 11 wherein said first and second VCSEL arrays are located on separate substrates.

18. (Unchanged) The optical recording system of claim 11 wherein said first and second VCSEL arrays are located on a common substrate.

19. (Unchanged) The optical recording system of claim 11 wherein said first and second VCSEL arrays have the same array spacing.

20. (Unchanged) The optical recording system of claim 12 further comprising:

a first polarizing beam-splitter located between said first VCSEL array and said objective lens;

a second polarizing beam-splitter located between said first polarizing beam-splitter and said objective lens; and

a circularly polarizing plate located adjacent said second polarizing beam-splitter.

21. (Unchanged) The optical recording system of claim 20 wherein said first polarizing beam-splitter comprises a dichroic polarizing beam-splitter.

22. (Amended) An optical recording system comprising:

- a writing array of Vertical Cavity Surface Emitting Lasers (VCSEL);
- a reading array of VCSEL;
- a dichroic polarizing beam-splitter positioned to receive a plurality of light beams from each of said writing VCSEL array and said reading VCSEL array;
- a polarizing beam-splitter positioned to receive said light beams upon said light beams exiting said dichroic polarizing beam-splitter;
- a circularly polarizing plate coupled to an exit face of said polarizing beam-splitter;
- an achromatic objective lens positioned to receive said light beams upon said light beams exiting said circularly polarizing plate, wherein said objective lens is capable of focusing said light beams on a target medium;
- at least one adjustment device coupled to said objective lens to adjust a position of said objective lens;
- a detection system positioned to receive said light beams upon said light beams reflecting from said target medium, said detection system capable of providing data to control said at least one adjustment device.